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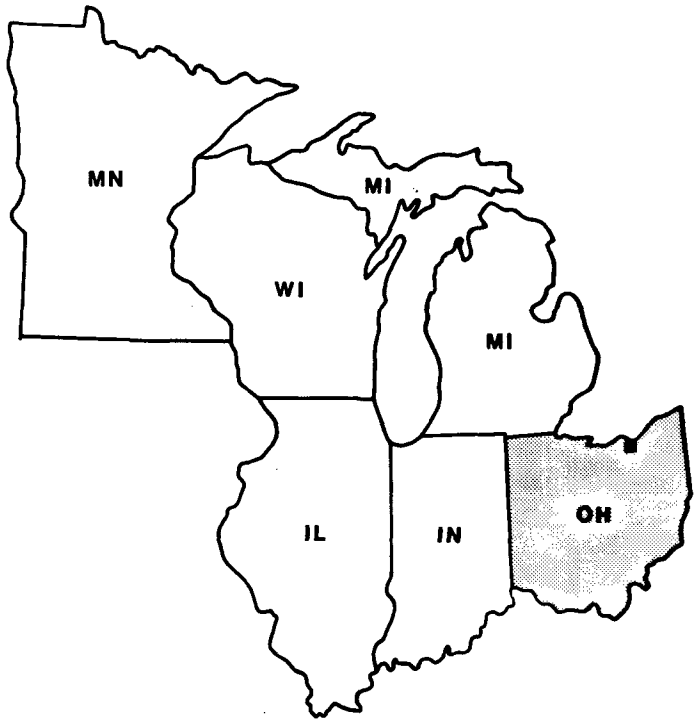
AERIAL PHOTOGRAP ANALYSIS OF MASTER METALS, Cleveland, Ohio

EPA Region 5



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January 1994

AERIAL PHOTOGRAPHIC ANALYSIS OF MASTER METALS, INC.

Cleveland, Ohio

by

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LAS VEGAS, NEVADA 89193-3478

NOTICE

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ABSTRACT

This report presents a historical analysis of Master Metals, Inc. located in Cleveland, Ohio. The report utilized aerial photography spanning a 54-year period (1938-1991) as the primary data source for the information provided.

In 1938, the site occupied approximately 1.2 acres and was a small operation consisting of one medium and one small processing plants (probably connected by a conveyor system) with three small warehouses, two small support buildings, and an access control/office building. There were no raw materials or end-products visible at that time. In 1951, a new powerhouse was added to the small processing building and the site was extended to accommodate accumulated solid waste. Warehouses had been enlarged, conveyors added, and both processing buildings were operating. By 1962, the site had again been expanded and a new processing building had been added. Most of the solid waste had been removed and probable scrap occupied that space. The "new" processing building was removed in 1977 and another one was constructed within the confines of the 1951 perimeters. The scrap had been removed and the area then appeared to contain end-products. No significant change was noted on the 1982 photo. The operational process may have changed by 1991, causing the addition of a six unit silo complex and three vertical tanks connected to the main processing building. The amount of end-products increased, the solid waste was removed, and ground stains appeared near the main access to the plant.

The U.S. Environmental Protection Agency's Environmental Monitoring Systems Laboratory in Las Vegas, Nevada, prepared this report for the Waste Management Division, Superfund Program Management Branch, Technical Support Section in Region 5, at Chicago, Illinois, and the Office of Emergency and Remedial Response in Washington, D.C.

CONTENTS

FIGURES

TABLE

Figure 1. Study area location map, Ohio. Scale 1:2,500,000.

INTRODUCTION

This report presents a historical analysis of Master Metals, Inc., Cleveland, Ohio (Figure 1). The site is located an flat terrain in the industrial area of Cleveland, Ohio and could be subject to a 100-year flood event due to it's close proximity to the Cuyahoga River. The focus of the report was on waste management practices during the period of survey.

The U.S. Environmental Protection Agency's Environmental Monitoring Systems Laboratory in Las Vegas, Nevada, prepared this report for the Waste Management Division, Superfund Program Management Branch, Technical Support Section in Region 5, at Chicago, Illinois, and the Office of Emergency and Remedial Response in Washington, D.C.

METHODOLOGY

Stereoscopic pairs of historical aerial photographs were used to perform the analysis. Stereo viewing enhances the interpretation because it allows the analyst to observe the vertical as well as horizontal spatial relationships of natural and cultural features. Stereoscopy is also an aid in distinguishing between various shapes, tones, textures, and colors that can be found within the study area.

Evidence of waste burial is a prime consideration when conducting a hazardous waste site analysis. Leachate or seepage resulting from burial and dumping of hazardous materials might threaten existing surface or ground-water resources. Pools of unexplained liquid are routinely noted because they can indicate seepage from buried wastes and may enter drainage channels that allow contaminants to move off the site. An excellent indicator of how well hazardous materials are being handled at a site is the presence or absence of spills, spill stains, and vegetation damage. Trees and other forms of vegetation that exhibit a marked color difference from surrounding members of the same species are labeled "stressed," "damaged," or "dead" based upon the degree of noticeable variation. Vegetation is so labeled only after consideration of the season in which the photography was acquired.

Drainage analysis identifies the direction a spill or surface runoff would follow. Direction of drainage is determined from analysis of the photographs and from U.S. Geological Survey topographic maps. Whenever they are available, 7.5-minute quadrangle maps (scale 1:24,000) are used to show site location and to provide geographic and topographic information. The site boundaries as depicted on maps and photos within the report were selected by the analyst, and are not intended to be used as legal boundaries.

The U.S. Environmental Protection Agency's Statement of Procedures on Floodplain Management and Wetlands Protection (Executive Orders 11988 and 11990, respectively) requires EPA to determine if removal or remedial actions at hazardous waste sites will affect wetlands or flood plains and to avoid or minimize adverse impacts on those areas. To aid in compliance with these orders, significant wetland areas

located within and adjacent to the site have been identified when present. However, these sites have not been visited to verify the accuracy of wetland identification.

Results of the analysis are shown on annotated overlays attached to the photos. The following table provides documentation of the photographs used in this report:

TABLE 1. DOCUMENTATION OF AERIAL PHOTOGRAPHY

Site name, location, geographic coordinates, SSID# and EPA ID#	Figures	Date of acquisition	Original scale	Film type*	Photo source†	Photo I.D.	Frames
Master Metals, Inc.	3	06-29-38	1:20,000	B&W	NARA	PZ-32	2396
	4	05-09-51	1:20,000	B&W	ASCS	PZ-3G	46
Cleveland, Ohio	5	04-08-62	1:23,927	B&W	EROS	VALP-2	92
	6	05-11-77	1:38,000	B&W	ASCS	39035-177	64
41°28'30"N	7	05-04-82	1:58,000	CIR	EROS	NHAP	169
081°40'31"W	8	05-15-91	1:40,000	CIR	EROS	NAPP-559	83
SSID #05-WB EPA ID #OHD097613871							

*Film type identification:
B&W: Black-and-white
CIR: Color Infrared

†Photo source identification:

EROS: U.S. Department of the Interior, Geological Survey, Earth Resources Observation Systems Data Center, Sioux Falls, South Dakota

ASCS: U.S. Department of Agriculture, Agricultural Stabilization and Conservation Service, Salt Lake City, Utah

NARA: National Archives & Records Administration, Washington, D.C.

Figure 2. Local study area location map, Cleveland South, Ohio. Scale 1:24,000.

ANALYSIS SUMMARY

The Master Metals, Inc. is located along West 3rd Street in the north-central part of Cleveland, Ohio, near the turning basin of the Cuyahoga River (Figure 2). The actual plant is located in the center of the Baltimore and Ohio (B&O) marshalling yard, just south of the roundhouse, near the north chokepoint. The site occupies approximately 2.4 acres after 1951 and 1977 expansions. The plant is in a valley, in a heavy industrial area surrounded by residential areas, on the banks of the valley. Surface runoff from the surrounding residential and industrial areas flow south into the Cuyahoga River. No surface runoff was noted from the plant during the entire period of the survey. The area is protected by the locks on Lake Erie, and is probably not subject to a 100-year flood event. There were no wetlands in the area and no vegetation damage was noted.

In 1938, the site occupied approximately 1.2 acres and was a small operation consisting of one medium and one small processing plants (probably connected by a conveyor system) with three small warehouses, two small support buildings, and an access control/office building. There were no raw materials or end-products visible at this time. In 1951, a new powerhouse was added to the small processing building and the site was extended to accommodate accumulated solid waste. Warehouses had been enlarged, conveyors added, and both processing buildings were operating. By 1962, the site had again been expanded and a new processing building had been added. Most of the solid waste had been removed and probable scrap occupied that space. The "new" processing building was removed in 1977 and another one was constructed within the confines of the 1951 perimeters. The scrap had been removed and the area then appeared to contain end-products. No significant change was noted on the 1982 photo. The operational process may have changed by 1991, causing the addition of a six unit silo complex and three vertical tanks connected to the main processing building. The amount of end-products increased, the solid waste was removed, and ground stains appeared near the main access to the plant.

PHOTO ANALYSIS

JUNE 29, 1938 (FIGURE 3)

At the time of this overflight, the Master Metals, Inc. plant was a small operation consisting of one medium and one small processing plants (probably connected by a conveyor system) with three small warehouses, one small support building, and an access control/office building. The larger of the two processing buildings has a conveyor system in the northeast corner of the site, probably for off/on loading of end products and raw materials. The site occupied approximately 1.2 acres and was fenced on all four sides with a single vehicle access gate near the northeast corner. The plant was serviced on the east by a rail spur off the Baltimore and Ohio (B&O) marshalling yard. One box car was on the rail spur at the time of this overflight. Although the plant appeared operational, due to a minimal amount of visible end products and raw materials, it was probably operating at a very low capacity. No spill stains or solid waste was noted.

INTERPRETATION CODE

BOUNDARIES AND LIMITS

- FENCED SITE BOUNDARY
- UNFENCED SITE BOUNDARY
- FENCE
- STUDY AREA

DRAINAGE

- DRAINAGE
- FLOW DIRECTION
- INDETERMINATE DRAINAGE

TRANSPORTATION/UTILITY

- VEHICLE ACCESS
- RAILWAY

SITE FEATURES

- DIKE
- STANDING LIQUID
- SL STANDING LIQUID
- EXCAVATION, PIT (EXTENSIVE)
- MOUNDED MATERIAL (EXTENSIVE)
- MM MOUNDED MATERIAL (SMALL)
- CR CRATES/BOXES
- DR DRUMS
- HT HORIZONTAL TANK
- PT PRESSURE TANK
- VT VERTICAL TANK
- CA CLEARED AREA
- DG DISTURBED GROUND
- FL FILL
- IM IMPOUNDMENT
- LG LAGOON
- OF OUTFALL
- SD SLUDGE
- ST STAIN
- SW SOLID WASTE
- TR TRENCH
- VS VEGETATION STRESS
- WD WASTE DISPOSAL AREA
- WL WETLAND

Figure 3. Master Metals, Inc., Ohio, June 29, 1938. Approximate scale 1:4,077.

MAY 9, 1951 (FIGURE 4)

By 1951, Master Metals, Inc., had expanded its site west to the B&O marshalling yard, increasing the occupied land to approximately 1.9 acres. A perimeter wall had been erected along the B&O marshalling yard. Additions had been made to the office building and conveyors had been added to the three small warehouses, connecting them to the main processing building. A probable, new powerhouse had been added to the small processing building. Almost all the space added to the site was bare ground containing three piles of solid material. The material was in a front-loader/dump truck configuration, indicating probable waste rather than raw materials. There were, also, two small piles of probable solid waste next to the vehicle access point in the northeast corner of the site. There were four box cars on the rail spur along the east side of the main processing building. Steam was rising from both processing buildings. A new street (West 3rd Street) had been built along the east perimeter of the site. The remainder of the plant appeared unchanged.

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Figure 4. Master Metals, Inc., Ohio, May 9, 1951. Approximate scale 1:4,433.

APRIL 8, 1962 (FIGURE 5)

An addition had been made to the west end of one of the existing warehouses. Waste material was still being stored in the triangular area at the southwest end of the site; however, this waste now appeared to be more in the form of scrap than dry material. A small pile of probable solid waste was located between the office building and the small support building. The small pile of solid waste previously located near the main vehicle access had been removed. The site now lacked a northern perimeter fence; however, a low wall had been constructed, blocking the old vehicle access point. The remainder of the site appeared unchanged.

The 1962 photography revealed the following changes to the site. The north perimeter fence from the B&O marshalling yard to the office building had been removed. The perimeter wall had been extended, along the B&O marshalling yard, north to the turntable associated with the rail roundhouse. A new processing building had been constructed along this wall, which appeared to have an accompanying, medium-sized, smokestack. Several tractor-trailers were also parked along this new wall.

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Figure 5. Master Metals, Inc., Ohio, April 8, 1962. Approximate scale 1:3,547.

MAY 11, 1977 (FIGURE 6)

A perimeter configuration change had taken place at the site by 1977. The "new" wall and "new" processing building (Figure 5) added to the site prior to 1962, had both been removed. Another new processing building had been built directly north of the powerhouse. Although there was still no perimeter fence along the north side of the site, it appeared that the new processing building was now within the original (Figure 3) confines of the site. The material located along the west wall in this photo was arranged in more orderly fashion (rows) and may have been end products rather than scrap. The perimeter fence along the south side of the site had been extended to the south to include another approximately 0.5 acres of land, raising the amount of land occupied to approximately 2.4 acres. A new vehicle access gate has been created in this perimeter, entering the site from West 3rd Street. Four dry material bins had been built in the very southwest corner of this new area and the remainder was being used for an employee parking lot. The original vehicle access gate had been restored. The small amount of probable solid waste located just south of the office building remains. The remainder of the site appeared unchanged.

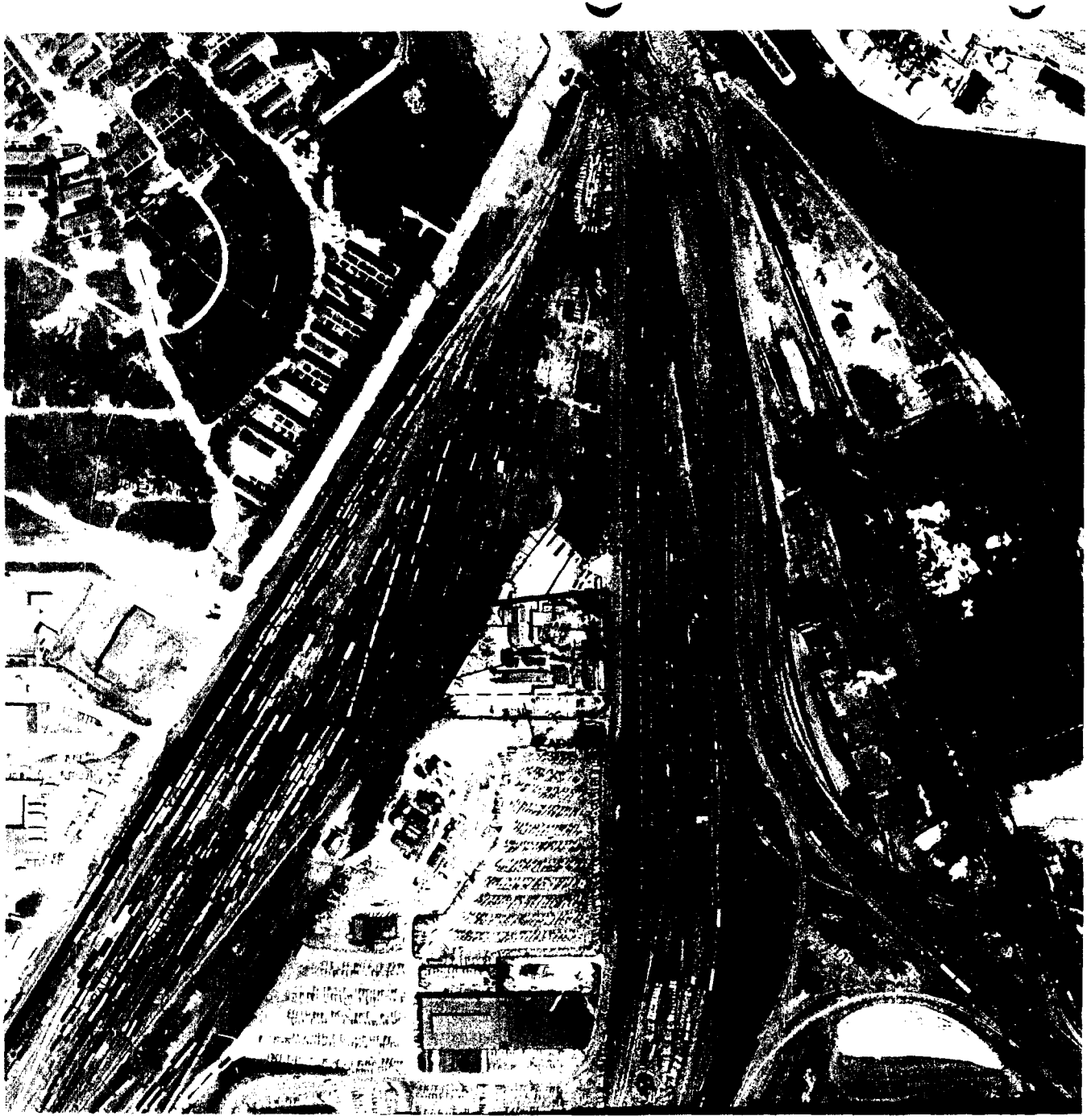

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Figure 6. Master Metals, Inc., Ohio, May 11, 1977. Approximate scale 1:3,775.

MAY 4, 1982 PHOTO (FIGURE 7)

Master Metals remains fully operational. No significant changes are visible at the site. Numerous tanks are identiified in the surrounding area.

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Figure 7. Master Metals, Inc., Ohio, May 4, 1982. Approximate scale 1: 8,000.

MAY 15, 1991 (FIGURE 8)

This photo revealed some internal facility changes in the plant area. The small support building, next to the latest constructed processing facility, had been removed, along with the square-type, small warehouse building located just west of the main processing building. In the place of these two buildings, a probable 6-unit silo had been constructed immediately north of the powerhouse and a probable three-unit bank of vertical tanks had been constructed immediately east of the silo complex. These tanks appeared to be connected to the main processing building by a conveyor system. The office building, except for the shed attached to the west end, had been removed. The amount of probable end product inventory stacked along the west perimeter wall appears to have increased in quantity. Dark ground stains were present leading into the northeast vehicle access gate from the roundhouse to the north. The probable solid waste previously located along the south side of the old office building had been removed. There is still no perimeter fence along the north side of the site. The remainder of the site appeared unchanged.

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Figure 8. Master Metals, Inc., Ohio, May 15, 1991. Approximate scale 1:4,210.